

REMARKS

There remains pending in this application Claims 1, 2, 4-6, 11, 16, 21 and 26, of which Claim 1 is the sole independent claim. No claims have been added. Claims 7-10, 12-15, 17-20, 22-25, and 27-30, previously withdrawn from consideration, are now cancelled.

In view of the above amendments to Claim 1 and the following remarks, favorable reconsideration together with entry of the above amendments and allowance of the above application are respectfully sought.

Applicants' invention as now set forth in independent Claim 1 is directed to an electromagnetic actuator comprising a core with a coil wound around the core, two stators magnetically coupled to each end of the core, a movable element opposed to the stators with two air gaps and a supporting means for supporting the movable element. As now set forth in independent Claim 1 the invention is characterized in that the stators and the movable element are made of the same material, and that the two stators and the movable element each have a projection and a depression in the two air gaps in such a way that the projection and depression of the stators engage with the projection and the depression of the movable element, the side surfaces of the projection and depression being parallel to the displacement direction of the movable element and partially overlapping even if there is no electromagnetic force.

Independent Claim 1 was rejected under 35 U.S.C. § 102(e), as being anticipated by Lee, et al. (U.S. Patent No. 6,563,238). The rejection is respectfully traversed.

Lee, et al. is directed to a comb structure in which a magnetic force, which is generated between a pair of intermeshed combs by applying a magnetic flux thereto, is constant with respect to the relative motion between the combs, as provided. The comb structure of Lee,

et al. includes a pair of magnetic combs, a magnetic flux guide for magnetically connecting the pair of combs, a coil wound around an arbitrary position of the magnetic flux guide, and a power supply connected to the coil. However, the structure of Lee, et al. fails to disclose or even suggest that there be two gaps between the stator and a moveable element both of which gaps have comb-tooth shaped portions as recited in Claim 1. Applicants have recognized that setting such two gaps and providing them with the comb-tooth structures can generate twice the force in comparison with the structure of Lee, et al. in which there is only one gap having the comb-tooth structure.

Accordingly, Applicants respectfully submit that independent Claim 1 is distinguishable over Lee, et al. The remaining claims in the above application are dependent claims which depend either directly or indirectly from Claim 1 and are therefore believed patentable for reasons noted above with respect to Claim 1. In addition, each recite features of the invention still further distinguishing it from the applied art. Favorable and independent consideration thereof is respectfully sought.

Applicants respectfully request entry of the above amendments after final as they are being presented in earnest effort to advance prosecution and place the application in condition for allowance. Entry of the above amendments at this time is deemed appropriate inasmuch as they more clearly recite the invention in the manner featured in the embodiments of the specification, such as depicted in Figures 1 and 2. Accordingly, entry of the above amendments is respectfully sought.

Applicants respectfully submit that all claims presently under examination are now in condition for allowance. Favorable consideration and early passage to issue is respectfully sought.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'L. Stahl', is written over a horizontal line.

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